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Homotopy types of one-dimensional Peano continua

Abstract. Let X and Y be one-dimensional Peano continua. If the fundamental groups of X and Y are isomorphic, then X and Y are homotopy equivalent. Every homomorphism from the fundamental group of X to that of Y is a composition of a homomorphism induced from a continuous map and a base point change isomorphism. If a continuous map $f : X \rightarrow Y$ induces an isomorphism between the fundamental groups of X and Y , f is a homotopy equivalence between X and Y .